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ABSTRACT

Intended for use in preservice or inservice training of regular secondary educators, the module examines principles of communication, assessment, teaching methods, and classroom management through text, an annotated bibliography, and overhead masters. The first section covers communicating with handicapped students, their parents, and other professionals. It explains the consultation technique of active listening and offers 11 oral communication tips. The section on assessment discusses assessment prior to referral, the formal assessment process, assessment to determine how best to teach a handicapped child in the regular class, assessment for grading (five levels of modifications are suggested), and achievement grade modifications on report cards. The section on methods for successful integration of secondary-level learning disabled students into regular content classes considers use of advance organizers, graphic organizers, memory strategies, methods for increasing desirable student behaviors, methods for decreasing undesirable student behaviors, and group management and preventative discipline. Also provided are 38 references, an annotated bibliography of 29 citations, and 18 overhead masters. (DB)

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SECONDARY LD MAINSTREAMING METHODS INSTRUCTIONAL MODULE

(An Instructional Module for Preservice or Inservice Training of Regular Secondary Educators)

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Prepared Through A
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SECONDARY LD MAINSTREAMING METHODS
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Communicating with Handicapped Students, their Parents, and Other Professionals:

Communication is an important part of working together in the effective mainstreaming of students with handicaps. Communication has been defined by Schuler and Perez (1988) as "behavior of one individual that serves to affect behavior of others, involving verbal as well as nonverbal behaviors of varying levels of intentionality and abstraction" (p. 260). This involves the development of open and consistent lines of communication through various communication channels: correspondence, meetings, phone calls, etc. This communication results in a positive and ongoing exchange of information with and about students, delineation of shared responsibilities in the education of the student, and an acknowledgement of the value of input and assistance from other involved individuals. This is something most of us feel somewhat competent in by the very fact that we have in one way or another, been communicating all of our lives. There are, however, certain techniques that may work to improve this communication between professionals, students, and parents. This definitions of various types of active listening are discussed below, including examples of each type. A number of communication forms and methods found in the literature which facilitate the education of mainstreamed students are also covered.

ACTIVE LISTENING

Active listening is a consultation technique which helps the listener actively process information communicated by others in such a way that the sender knows it has been received and understood. It is effective with students, teachers, and parents. Parent conferences and IEP planning conferences are excellent places where we should use effective active listening skills. There are six types of active listening defined by West, Idol, and Cannon (1989). They include the following: acknowledging, paraphrasing, reflecting, clarifying, elaborating, and summarizing. Each of these will be described briefly.

Acknowledging is means of letting the listener know you are attending to what they are saying. This is often done by nonverbal cues such as nodding or making eye contact. It may also be done by saying phrases to let them know to go on with what they are saying such as "OK" or "Please go on".

Paraphrasing takes place when the listener restates the message received in his or her own words. The paraphrase is a way to check if the listener received the message the speaker was communicating. If the listener does not paraphrase accurately the message communicated the speaker will usually amend it.

Reflecting involves looking at the emotion or

feelings attached to the message communicated. In reflecting you will attempt to label the emotion of the speaker such as "You are confused about what you should do about this" or "You are afraid of what your husband will say about his grades in reading" or "You are happy that your child will get this additional help in social studies". You always take a risk when you try to label someone else's emotions, but in the process you are trying to show empathy to the concerns of the speaker.

Clarifying is a way of asking whether or not you got the message that was sent. You usually do this by asking a question such as "Did I describe the problem correctly?"

The active listening skill of elaborating is an effort to help the speaker tell more about the topics to be discussed. Sometimes topics of conversation are difficult for the speaker and the listener will need to "listen between the lines" and attempt to guess at what the speaker was alluding to and embellish on that information. This is, again, often difficult to do as it is easy to not perceive exactly what the speaker was guardedly trying to say. An example might be a parent who came for a conference and when you talked about the student's difficulty at completing the reading assignments in the science text the parent might say something like "You know his father" and just leave it hanging there. In elaborating you would have to take what you know about the student's father and take a guess at what the parent

wanted you to say which might be that his father had also had difficulty with reading or maybe that the father needed the boy to work in the store and he did not have time to do the reading. It is often difficult for students, parent, or teachers to be truly candid about problems they are experiencing.

Summarizing is a method of selecting important information spoken, restating it, and using this summary to further the discussion or lead to a problem solution. It helps to keep communication on track and progressing. It lends to closure to a lengthy discussion or to the clear statement of a problem or solution.

Each of these six means of active listening could be used in one conversation. One response may encapsulate a number of the listening procedures. By using these procedures we let the speaker know that we value what they have to say, are interesting in what they are saying, and wish to work together to resolve conflicts or lead to effective planning for the student with special needs.

ORAL COMMUNICATION TIPS:

Harrison and Spuler (1983) have delineated a number of tips for effective oral communication. The following items seem particularly appropriate in working with handicapped students and parents of handicapped students.

1. Know your audience.
2. Do not talk down to your audience.
3. Do not confuse them by using educational jargon.
4. Be sensitive to other people's feelings.
5. Do not be afraid to say "I don't know."
6. Be professional and maintain your dignity in all oral communication situations.
7. Be attentive to the other person and do not interrupt.
8. Be sure you understand what the other person has said before you respond.
9. Do not be offended if something you have said is misunderstood.
10. State everything, no matter how awful, in positive terms.
11. Orally encourage all students (and parents).

(p. 28-29)

These pointers will help you to communicate effectively and positively with other individuals.

It is equally important to be aware of your nonverbal forms of communication. Some say they communicate up to two-thirds of the message (Knapp, 1972). These include such things as your body posture, eye contact, tone of voice, and facial expression. If these do not communicate

the same message as the words you use, the listener will tend to suspect you are not sincere in what you are trying to say.

Assessment

The regular class teacher is involved in the initial and ongoing assessment of students with learning disabilities in many ways. They may be responsible for making the initial referral of a student for formal assessment. Although the formal assessments are generally completed by a school psychologist and other trained diagnosticians in the school such as a speech pathologist or special education teacher, the regular teacher may be called on to complete a behavioral questionnaire on the student, relate grades and attendance records, and provide any anecdotal information he or she has on the student. For students who are labeled handicapped the regular teacher will need to develop and use informal assessments to determine what and how best to teach course content. In addition, the regular teacher will be involved in assessing the student's proficiency in the subject matter. Each of these assessment responsibilities will be described briefly.

Assessment Prior to Referral

Before a student is referred for special education assessment, the regular teachers must document that modifications have been tried and found unsuccessful with these students. To do this, regular teachers should keep, (1) anecdotal records about modifications they have made

for the students, (2) data on student performance in the class, and (3) a record of behavior data if it relates to the presenting problem. There are many ways to gather and record information about a student's performance on class work. Regular teachers often look at percent accuracy on homework assignments and tests. This type of information helps describe the student's level of mastery. When the presenting problem is one of social behavior, the teacher will need to gather other types of information. This can be done using a variety of measures depending on the presenting problem. If it is a behavior which can readily be counted, you may want to keep a frequency count writing down how often the behavior occurs each day. If it is a behavior which is long in duration, you may find it more revealing to keep track of the amount of time that the behavior is occurring, a procedure called duration recording. If it is a problem with a delayed response to a command or tardiness, you may want to record latency data telling the amount of time that lapses after the student should start exhibiting a behavior and actually begins. In other instances, anecdotal notes may be the best way to describe the behavior. Anecdotal records should describe in detail what happened, when it happened, who observed it, and the setting. All of these forms of assessment may occur prior to a special education referral or after the referral to assist in pinpointing the problem academic or social emotional behaviors.

Formal Assessment Process

There is a formal assessment process mandated for the identification of learning disabled students. In the characteristics module these regulations are clearly delineated. These usually involve the following types of assessments: psychological (estimation of IQ), social-emotional, physical, hearing, vision, speech and language, and academic achievement. As regular educators, you are usually minimally involved in this formal assessment process. You may, however, be asked to complete a questionnaire describing the social behaviors of the student within your class setting. There are a number of instruments used for this purpose including the Brown and Hammill Pupil Behavior Rating Scale, the Walker Behavior Checklist and Burke's Behavior Rating Scales. Each of these contains 50-150 descriptive items and the teacher must say if they describe the student being assessed. In addition, you may need to supply the evaluators with evidence of the student's progress or lack of it in your class such as grades and sample tests or assignments. If the student is labeled handicapped and placed in mainstream secondary courses, the regular teacher will need to look at other areas of assessment.

Assessment for How to Teach the Handicapped in Your Class

Secondary teachers have a responsibility to attempt

to teach the handicapped student in the mode of instruction that will best suit the student. To do this, the teacher must determine the student's learning style or preference. Special education teachers and others who have formally assessed the child will be able to provide some of this information from their assessment. However, the student may exhibit different needs and preferences in different subject matters. Secondary education teachers can accomplish this using a simple questionnaire asking the student to indicate which grouping arrangement, presentation format, and testing format he prefers for specific subject matter. Each of these are taken into consideration in the attached learning preferences inventory from the Arizona Parallel Alternative Curriculum Materials (Hartwell, Wiseman, & Van Reusen, 1979).

Secondary teachers can determine levels of competency or readiness for subject matter by using pretesting techniques. Secondary teachers should identify the skills or objectives necessary to fulfill subject requirements. In analyzing performance, a task analysis, or breaking down of each of these skills into its component prerequisite tasks, may create an assessment to determine the entry level of students into the class. This allows the teacher to identify gaps or holes in the student's concept formation that may impede the student from learning the course content.

Assessment for Grading

The area of assessment which is troubling to many secondary teachers is in assessment for the purpose of grading. Teachers may have difficulty deciding on an equitable assessment and grading system for mainstreamed LD students. The modification requirements will vary for each student. This should be discussed at the student's individual educational planning meeting.

Bigge (1988) has delineated a range of five levels of modifications that relate to assessing proficiency in a course. Bigge's suggestions all relate to teacher-specified objectives for the course. They include:

1. Same objective---same complexity
   (alternative methods)
2. Same objective--reduced complexity
3. Lower grade competency
   (Mastering skills in the subject
   area at a lower grade level of
   performance)
4. Different objective
   (Requiring mastery of some skills
   which are enrobe to the original
   course objectives)
5. Unique differential standards
   (Setting objectives which are different
   than class objectives such as

skills in keeping a checkbook rather
than advanced algebra skills)

Secondary students mainstreamed into regular education courses are usually given assessments which are modified in the first three ways.

Assessing the Same Objective-Same Complexity

There are a variety of methods to assess the performance of students in regular classes. There are three common test formats: objective tests, essay tests, and oral tests. In some subject areas such as art, music, physical education, some sciences, and vocational courses, there may also be performance tests where the student demonstrates knowledge or skill via action or demonstrations. A student with a learning disability may be better able to demonstrate his knowledge on the subject in one of these ways. Flexibility on the part of the secondary teachers may result in a more accurate assessment of the student's knowledge about the subject. An overhead in the final section of this report displays the advantages and disadvantages of three testing options for various students with learning difficulties. Secondary teachers should consult with the student and special education teachers in determining which approach would be the most advantageous for each student.

Assessing the Same Objective-Lower Complexity

Students may be asked to demonstrate acquisition of

skill but on a lower level of abstraction by focusing on questions which require only knowledge or comprehension of the information. In science this may involve the ability to tell the stages of photosynthesis in lieu of analyzing how climatic changes may affect the process. In government, this could apply to stating the functions of the three branches of government instead of comparing and contrasting their roles and responsibilities.

The assessment procedures could also be modified to include prompts on the assessments (see overhead) to help the students recall the information such as: (a) giving the initial letter to a word for a fill in the blank item, (b) giving or reducing the number of choices for a multiple choice test, (c) allowing the student to take a test with open book or notebook, (d) providing cues on the assignment such as the page on which to look for the answer. Each of these methods reduces the complexity level of the assessment by allowing the student to simply recognize or recall with cues the information in lieu of total recall or analysis and synthesis of the information presented.

Lower Grade Competency

In some instances, secondary teachers may focus on objectives that would normally be presented at a lower grade competency level. This may be particularly true in such areas as mathematics or English. A student may be registered for a business math course but lack necessary

prerequisite skills. In this situation, the student may be taught and tested on skills that are commonly learned at a lower grade level. The same may be true in an English writing class. If the student lacks some of the basic mechanics of writing such as capitalization and punctuation or paragraph development, these skills may be emphasized and assessed in lieu of the standard objectives for the senior writing class.

In cases where lower grade competency teaching and testing is used it is often necessary for special education personnel to locate, develop, or monitor the performance of the mainstreamed student in the class. Grading is based on the student's performance on the material presented to him/her.

Achievement Grade Modifications on Report Cards

There are a number of ways of modifying report card grades for the student who is mainstreamed and requires assessment modifications. There is a general consensus in the field that if the same objectives and same level of competency are being required of the student, there need be no indication on the report card that an alternative form of the test has been used such as an oral test instead of a written objective test. If, however, the objectives or skills covered are not the same, most schools require some indication of this on the cumulative

record and report card. In many schools, an indication of modified curriculum or proficiency assessment is indicated by an asterisks after the grade with an explanatory statement somewhere else on the report form (Weisenstein & Pelz, 1986).

There are a number of other modifications which are possible (Schulz & Turnbull, 1984; Wood, 1984). These include evaluating the students according to the proficiency levels specified on the IEP on the individual objectives. If, for example, the IEP objectives state a level of 80% accuracy as an acceptable criterion level of performance this could be used to indicate a B. Other grades would be determined by the student's performance above or below this criterion level (see overhead on Evaluation Alternatives).

Another way to alter the grading system is to move to a different lettering system. This, however, presents some major difficulties for students seeking post secondary education. This would result in grades of: S-Satisfactory, I-Improving but not completely satisfactory, N-Needs to improve, and U-Unsatisfactory progress. This may be a viable alternative for daily work but most school districts will require a standard letter grade on quarterly reports.

Letter grades may also be used with modifications indicating the grade level at which the student is working in the subject area where lower grade competency tests are

being used with the student. The grade would contain a letter grade with a superscript indicating the grade level of work presented: B^{7}

Where the standard grading system is being used, some teachers may wish to add an effort indicator for the student with 1 indicating best effort, 2 indicating good effort, and 3 indicating poor effort. The grade would be presented in this fashion: C/1. Even though the child may not be achieving academically at a high level, the teacher has a way to indicate to the child and his parents knowledge that the student is working hard and completing assignments even though there may be limited accuracy.

Methods for Successful Integration of Secondary LD Students Into Regular Content Classes

One way to conceptualize learning disabilities is as uneven rates of cognitive development (Bender, 1957). In other words, a learning disabled adolescent may manifest a globally normal rate of cognitive growth but in a specific ability, such as understanding symbols, may act like a younger child. The literature is replete with examples of skills where LD students perform more like younger children than they do like their age--peers (Koppitz, 1973; Mercer, 1987). Tarver, Hallahan, and Kauffman (1977), for example, posited a developmental lag in LD students' selective attention; Torgesen (1980) made a similar point for memory strategies.

If LD students are "developmentally younger" , we might look to the developmental literature for clues regarding how they can be helped. In an excellent review of Piaget's theories, Boden (1979) pointed out that cognitive development implies an increasing ability to represent abstractions in mental maps or schemes. The sophistication of these cognitive structures increases with physical development and in interaction with the environment. Simply put, a cognitively younger child is best able to "handle" information based on the world of real objects and graphically--displayed information. Thus, instructors who present information at a variety of levels of complexity and take care to use pictorial representations, demonstrations, and real objects stands a better chance of "reaching" LD students. Fisher (1987) presented a hierarchy of abstraction ranging from

the concrete (tangible materials, direct educational experiences, models) to a middle range between abstract and concrete (charts, graphs, maps, pictures, simulations, demonstrations), to the abstract (concepts presented verbally, generalizations, principles, and theories). If there is one principle which should guide the selection of methods, materials, and testing procedures to better involve LD students, it is to always move toward the concrete end of Fisher's hierarchy. Ask yourself whether a theory can be demonstrated in operation, graphed, modeled, or shown via tangible materials? Can verbal material be stated more directly? Can information from text or lecture be covered via AV materials?

Specific suggestions for reducing the cognitive "load" of academic information are explained below. Materials and methods covered are advance organizers, graphic organizers, and memory strategies.

Advance Organizers

Ausubel suggested a method which can be used to provide organization to knowledge which LD students may not be able to impart independently. Learning disabled students in a content area class may be so intent on interpreting verbal information and converting it into notes that they may miss the structure or "big picture" intended by the lecturer (Alley & Deshler, 1979; Lenz, 1987). Advance organizers are instructional aids which are intended to circumvent disorganized thinking and listening. According to Lenz (1987), advance organizers include at least one of the following components:

a) announcement of the benefits of the advance organizer

b) topics and subtopics

c) physical requirements needed for the learner and instructor to accomplish the task

d) background information related to new learning

e) concepts to be learned (specific or general)

f) examples for clarification of concepts to be learned

g) the organization or sequence in which the new organization will be learned

h) motivational information

i) relevant vocabulary

j) goals or outcomes desired (Lenz, 1987, p. 12).

Advanced organizers are materials presented prior to a class session which facilitate learning by providing structure for information. Many times the advance organizer consists of a form which is set up for convenient note taking and verbal information preparing students for the upcoming task.

Graphic Organizers.

A set of methods that can be used an advance organizer or in a variety of other ways are graphic organizers (Alley & Deshler, 1979). Related terms from the learning literature are cognitive, semantic, or concept mapping as well as picto organizers (Alvermann, 1983). Reid (1988) presented a variety of other graphic organizers including semantic feature analysis charts, array outlines, pyramid outlines, radial outlines, herringbones, and webs. Central features of all graphic organizers are that vocabulary for a lesson is presented either pre-- or post hoc, that the nature of the relationships between concepts are graphically depicted (which concepts sub-- and supersume others), and that some vocabulary represents previous knowledge for students. Graphic organizers take the form of diagrams or pictures or a combination of the two.

Graphic organizers are effective for several reasons. First, they may provide a visual analog for the cognitive structure a teacher is attempting to impart. Second, the visual nature of graphic organizers probably reduces the level of abstraction of concepts thus presented (especially compared to lectures or written material). Third, if distinctive visual features are added to information, LD students will be more likely to use "visualization", an effective memory strategy (Alvermann,

1983). Finally, as LD students attempt to depict text passages, they are forced to actively interact with written material. This, by itself, may help the many LD individuals who tend to act passively in learning situations (Torgesen, 1980).

Graphic organizers can help increase comprehension of the material presented. Crank (1989) found that teacher use of graphic organizers in lecture presentations accounted for increased test scores of about five percentage points without any other classroom modifications for LD students.

In a review of literature on use of graphic organizers Moore and Readance (1980; 1983) make the following points. Graphic organizers tend to work best as a post-organizer (as opposed to use as an advance organizer). Students' vocabulary is improved more than overall comprehension. Student-produced advanced organizers work better than instructor-provided ones (though both work). Finally, teachers rate the method as an efficient way to hone their thinking about subject matter prior to lecturing or making assignments.

Graphic organizers can help students with learning disabilities take notes from teacher lectures as all key ideas will be depicted on the teacher's graphic organizer. Teachers can provide students graphic organizers with missing elements to use as advance organizers when reading content class texts. Students may also create their own

graphic organizers as an alternative notetaking method.

To involve students in the development of graphic organizers secondary teachers should begin by modeling how a graphic organizer is constructed. The use of cooperative learning groups may be appropriate in teaching students to develop their own graphic organizers. The following steps are recommended which are an adaptation of those of Vacca (1981): (1) divide the class into heterogeneous groups, (2) have the students write down all of the key words and ideas in a passage from their text, (3) have the students group the words and ideas into categories, (4) have the students choose a word from the group to label the category and use these as secondary category labels, (5) arrange the other words or ideas under their categorical title, (6) create a permanent graphic organizer by writing in the words and ideas as organized in the format modeled by the teachers. These steps lend themselves primarily to either a tree diagram, pyramid outline, or radial outline (See Overhead).

A herringbone outline is a graphic organizer which is particularly useful in social studies lectures and notetaking as well as in literature classes. It activates the student's listening or reading by focusing the student on reading to answer the questions of who, did what, when, where, how and why. This helps LD students who often fail to ask questions of their reading (Reid, 1988).

A number of examples of graphic organizers found in

the literature are presented in the overhead section depicting their use with science and social studies information. Certain formats may be more applicable to different academic content areas.

Memory Strategies for the Learning Disabled

There are a number of techniques or strategies that lead to active processing and storage of information for the purpose of later retrieval. As students with learning disabilities are often described as passive learners (Alley and Deshler, 1979), instruction in use of these memory strategies is warranted. The memory strategies chosen and used by individuals often reflect their own learning styles and preferences. Various strategies are applied because they are specific to certain types of information that must be recalled. Memory strategies have been divided into the categories of visual and verbal methods. The most frequently described visual memory strategies include the keyword method, the pegword method, and the method of loci. The verbal memory strategies include rehearsal, narrative chaining, and first letter mnemonics, called acronyms or acrostics. When trying to retain information it is often helpful to visualize verbal information and to verbalize things that are visual. Two memory strategies, keyword and first letter mnemonics, which have the greatest research base for use with learning disabled students will be described in detail along with examples of how they can be used in content area classes.

The keyword method has been shown effective in the teaching of vocabulary and concepts in English, science,

history and foreign languages to students with learning disabilities (Mastropieri, Scruggs, & Levin, 1985; Mastropieri, Scruggs, Levin, Gaffney & McLoone, 1985; Mastropieri, Scrugg, McLoone, & Levin, 1985; Scruggs, Mastropieri, McLoone, Levin & Morrison, 1987). The keyword method has been used to create visual images of things that are not concrete in nature. Instead of making an image of an abstract word, the student is asked to associate the abstract word with a concrete word that sounds like it and to use this information to create the new images that allow for easier recall. Levin (1983) has described this strategy as having three steps: recoding, relating, and retrieving. If, for example, a student must memorize a scientific term such as "pinna" the student must recode or change the word by relating it to a known word. The word sounds like "pin". Now the student will make an image of something as it relates to the definition of the term which is the cartilege that forms the outer flap of the ear. The student then creates a visual image of the pin with the outer ear (see overhead). These images visually displayed on paper, the chalkboard, or an overhead for the student. To retrieve the word's meaning the student simply says the word, recalls the acoustically similar word "pin" whose visual image will display the definition of the term.

It is best to involve the students in the development of these key words and visual displays. The process of

elaboration and transformation of the words helps the students to recall the information. In regular secondary classrooms this could be accomplished through group discussion with the students or in peer tutoring or cooperative learning groups. The use of the chalkboard or overhead projector to display these keyword associations is helpful.

This particular strategy is especially useful to memorize new vocabulary words, match names of individuals to their contributions, or to match related items such as states and capitals. The teacher should begin using them by modeling how to create this association before asking the students to generate their own.

First letter mnemonics is a verbal method that will be described in detail. This strategy is particularly useful when a student must learn a list of items. The first step involves generating the list to be learned. This may be guided by the secondary teacher or the student may need to do this independently from the content text. After the list is generated the student must attempt to form a word from the first letter of each key idea or word. This can be accomplished by changing the order of the words if appropriate and/or adding vowels to make it a word. One of the most common examples of a first letter mnemonic which is an acronym is "HOMES" which represents the great lakes of Huron, Ontario, Michigan, Erie and Superior. Another well known first letter mnemonic is

FACE representing the spaces on the treble cleft in music.

Sometimes it is difficult to construct a single word from the first letters of the key words to be learned. In this case it may be easier to create a sentence in which the beginning letter of each word represents a key word of what is to be learned. A well known example of this is the acrostic for the order of the planets from the sun: My very educated mother just made us nine pizza-pies.

First letter mnenomics and the key word method have been found effective in producing increases in retention of information presented among LD students. They can both be readily incorporated into a lecture to not only provide the students with the content to be learned but an effective method with which to recall the material.

Behavior and Classroom Management

Psychologists who embrace the operant theory of B. F. Skinner have established principles for managing students' behavior in applied settings like classrooms (Alberto & Troutman, 1986). Since these procedures, collectively called Applied Behavior Analysis (ABA), are frequently used by special educators and psychologists with handicapped students it behooves regular classroom teachers to be familiar with the nomenclature.

Behavior analysis can be thought of as a process of quantifying occurrence of target behaviors (stating and counting them in observable terms), deciding whether an intervention is warranted, and instituting a treatment if an affirmative answer is reached. Methods for quantifying or measuring behavior are laid out in the measurement section of this document.

A central features of ABA interventions are that they are based upon operant conditioning principles. This means that desirable behaviors emitted at too low a rate will be positively reinforced and that attempts will be made to reduce undesirable behaviors. Formerly, undesirable behaviors were typically treated via application of punishing contingencies following their occurrence. However, there has recently been a sea change in ideology on the part of special educators. Whenever possible, inappropriate behaviors are reduced via reinforcement--either reinforcement of periods of time when the target undesirable behavior has not occurred or reinforcement of an appropriate behavior which is incompatible with the target response (Alberto & Troutman, 1986).

Several specific behavior management techniques are developed below. For the interested reader there are several excellent introductory texts on ABA. The information below is summarized from two of these (Alberto & Troutman, 1986; Walker & Shea, 1988).

Methods for Increasing Desirable Behaviors

Positive reinforcement. Responses or behaviors followed systematically with positive reinforcement such as candy, compliments, or a hug, will increase; or rather the future probability of reoccurrence of the behavior increases. It is important to note that if a response is regularly followed by a supposed reinforcer and its rate does not increase, the applied stimulus was not a reinforcer. Reinforcers are defined operationally as stimuli which when applied following a behavior strengthen that behavior. For example, if a student is "rewarded" following completion of math problems with teacher praise and the rate of responding does not increase, it cannot be said that the praise was a reinforcer. To be a reinforcer, a stimulus must increase a behavior it follows.

Reinforcers can be edible objects, or social in nature (such as praise). In addition, a class of reinforcers (called Premack reinforcers) increase behavior through access to a desired activity. On order to be effective during initial learning reinforcers must be presented immediately following the target behavior, contingent upon the target behavior, and satiation must be avoided. Satiation is the principle that a reinforcer loses its value after continued use. To avoid satiety, special

educators will often employ a token economy. A token economy is a system for delivering symbolic reinforcers (check marks, tokens, or points) which can later be exchanged for back up reinforcers. Students do not readily become satiated on token reinforcers because they can be exchanged for a variety of desired reinforcers.

Modeling and other prompts. Showing a student how to do something is an excellent way to initiate a behavior so it can be subsequently reinforced and thereby learned. In ABA, modeling is considered one form (albeit the most important) of prompt.

Prompts are defined as stimuli added to a learning situation which increase the likelihood that a behavior will occur. Written and verbal instructions are considered prompts. Many times a teacher guides a student through a new skill physically--touching their hand or body only as much as necessary. Such "physical guidance" is considered to be a form of prompt.

A behavior can be started by modeling or other prompts, but to keep it going two things must occur. First, the behavior initiated via prompting must be positively reinforced. Second, the prompt must be systematically faded. Unless prompts are faded, students may become dependent on them.

The process of systematically eliminating prompts is called fading. For example, a pupil may be able to work a class of algebra problem only in the presence of a set of written steps and an exemplary completed problem. An instructor could fade the prompts by first eliminating the example, then the second half of the written steps. Finally, the entire prompt may be faded and

the student is required to work independently. While fading was proceeding, the teacher would continue to reinforce correct performance.

Shaping. Shaping is defined as reinforcement of successive approximations of a target behavior. Some skills are so difficult that we reinforce students for getting an aspect of it correct. When this is well learned, a teacher might require slightly more sophisticated or complete performance before reinforcement is delivered. Proceeding in this manner, correct performance is ultimately achieved.

Chaining and task analysis. Some skills can be broken into a series of discrete steps. A teacher can identify the specific series of ordered steps required to perform a complex task; the process of identifying teachable steps is referred to as "task analysis". Once steps have been outlined via task analysis they can be trained in the correct order; the latter process is "chaining".

Methods for Decreasing Undesirable Behavior

Methods using positive reinforcement. There is a technology available to behavior analysts and teachers for using positive reinforcement to decrease undesirable behavior. This may seem ironic in that reinforcement is defined in terms of its positive effect on behavior, but by reinforcing periods of time when the target undesirable behavior does not occur or reinforcing an incompatible response, reinforcement can be used to decrease unwanted behaviors. Below, the two most common forms of reinforcement-based reductive techniques, differential

reinforcement of incompatible behavior (DRI) and differential reinforcement of other behavior (DRO), are briefly defined and explained.

Differential reinforcement of other behavior (DRO) is defined as reinforcement of the absence of the target response. A teacher, for example, observes that a student tends to leave her desk and disturb other students approximately every 15 minutes. The teacher may set a timer for ten minutes and deliver a reinforcer (praise, for example) if the student had not left her desk during the preceding 10 Min. Once the student has learned to stay in her desk consistently, the periods of time between reinforcement can be slowly increased (DRO + shaping). A student learns that they receive reinforcement only when they do not emit the target behavior.

A method even more powerful than DRO is differential reinforcement of incompatible behavior (DRI). To use this technique, a practitioner must select an appropriate behavior to reinforce which cannot occur at the same time as the unwanted response. For example, a hyperactive secondary student might receive reinforcement for periods of time "in seat and on task" if the target inappropriate responses are "out of seat and off task". Of course both in seat and on task must be operationally defined so that reinforcers can be delivered contingently upon the occurrence of these and only these behaviors. A problem with use of DRI is that an appropriate incompatible behavior is not always available.

Behavior reduction procedures based on positive

reinforcement are currently the treatment of choice whenever possible. Many behaviors have been successfully reduced via these techniques and some of the pitfalls of punishment use, such as emotional responding, can be thus avoided.

Extinction. Extinction is defined as not delivering a reinforcer for a behavior which has been regularly reinforced in the past. A secondary educator might refuse to assist a student after he makes a negative verbalization. The principle of extinction holds that a behavior which does not receive reinforcement will decrease in rate or duration. Extinction is most applicable in situations where the noxious behavior in question is maintained by adult attention; when extinction is manifested as refusal to attend to inappropriate behavior it is called, "planned ignoring". Extinction is not always easy to use. First, some behaviors are very difficult or dangerous to ignore. In such cases, extinction would not be the treatment of choice. Second, in many cases behavior which has been frequently reinforced will actually increase in frequency before becoming weaker.

Time out. If a school environment is generally reinforcing, that is overall, students find access to a classroom reinforcing, then contingent removal from that environment can be used to reduce unwanted behaviors. This procedure, called time out, can be a very effective technique for some students and some behaviors. It can take forms from having a student sit down in his desk following inappropriate behavior during a science lab to removal to an enclosed time-out room. The latter treatment can

only be legally performed under a very narrow set of conditions for ethical and legal reasons. Practitioners using time out are urged to be certain that students are not missing a great deal of class time (time in) while in time out. If brief (up to 10 Min.) periods are not working to reduce the behavior, some other technique should be considered.

Punishment. Punishment is the application of aversive stimulation following the occurrence of a response. Like reinforcement, punishment is operationally defined. If a supposed punisher is regularly applied and the behavior does not decrease, then the stimulus was not a punisher.

Punishers can be very mild, from reprimands (Madsen, Becker, & Thomas, 1968) or public posting of grades (Jones & Van Houten, 1985) to the application of physically or psychologically painful stimuli. Current suggested practice is that punishment should not be used at all if one of the reinforcement-based reductive procedures can profitably be employed. Certainly, within the category of punishers, mild rather than severe methods should be employed. In most cases there are at least procedural, if not legal restrictions to the use of strong punishers such as spanking (Hoover, Schlicht, & Beane, 1987).

Lewis and Doorlag (1987) presented a list of generic steps used by behavior analysts in conducting a treatment. These principles correspond to programs that regular educators will see in operation (planned during IEP meetings):

1. State behavioral expectations
2. Determine whether students meeting expectations

are receiving reinforcement

3. Determine if there are any children not meeting expectations. Do they know expectations? Can they perform all prerequisite skills?
4. For students with inappropriate behavior, identify target behaviors to be achieved
5. Select an observational system and collect baseline data
6. Analyze data to determine the need for an intervention program
7. Determine whether behavior to be changed needs to be learned initially, increased, or decreased
8. Select an intervention
9. Implement the intervention
10. collect data on student performance
11. determine need to modify, terminate, or continue program
12. Collect maintenance (transfer) data

(paraphrased from p. 100).

Group Management and Preventative Discipline

By attending to general principles of classroom management laid out by such authors as Kounin (1970), regular educators can establish an environment which allows for the best possible performance of mainstreamed LD students. Biehler and Snowman (1986) summarized research by Kounin and others with the following generic suggestions:

1. Show you are confident and prepared the first day of class.
2. Think ahead about how you plan to handle classroom routines and explain basic procedures the first few minutes of the first day.
3. Establish and call attention to class rules.
4. Begin class work the first day with an instructional activity that is clearly stated and can be completed quickly and successfully.
5. During the first weeks with a new group of students, have them spend most of their time engaging in whole-class activities under your direction.
6. Give clear instructions, hold students accountable for carrying them out, and provide clear feedback.
7. Continually demonstrate that you are competent, well prepared, and in charge.
8. Be professional but pleasant, and try to establish a businesslike but supportive classroom atmosphere (pp. 612-616).

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Teaching Metholodology for Students with Learning Disabilities

Annotated Bibliography

Anders, P. L. & Bos, C. S. (1984). In the beginning: Vocabulary instruction in content classrooms. Topics in Language and Learning Disorders, 3(4), 53-65.

This article focuses on the teaching vocabulary in high school content area classes. The articles defines content area vocabulary. Concepts are seen as general ideas and the authors point out the importance of classroom teachers to specifically identify the concepts to be taught and to teach labels associated with these ideas. The authors presented a number of visual organizers to aid in the instruction of concepts including a graphic organizer, a semantic map, and a semantic feature analysis grid. Each of these portrays the meaning of vocabulary and concepts in relation to other vocabulary words or concepts. The article also presents some measures for assessing content area vocabulary. The authors conclude by saying that one must help the learning disabled student activate prior vocabulary knowledge and integrate this to develop an understanding of related vocabulary.

Chilcoat, G. W. (1987). Teacher talk: Keep it clear! Academic Therapy, 22(3), 263-271.

This article points to the importance of clarity in teacher presentations which make up about two-thirds of all typical classroom time. This is particularly important for LD students who may be passive rather than active listeners. Clarity in teacher talk is essential for the goals of comprehension and retention of LD students. The article delineates a number of likely consequences of unclear teacher talk. To improve clarity of teacher talk the author recommends the use of precise language and vocabulary, exact detail, the use of clear and specific statements, and exact terminology. The author goes on to describe specific elements of pace and delivery and precise language in detail. Even though clear and precise language is used, it does not guarantee student comprehension and attention but it improves the potential for this to occur.

Graves, A. W. & Levin, J. R. (1989). Comparison of mnemonic text-processing strategies in learning disabled students. Learning Disabilities Quarterly, 12, 232-236.

The authors evaluated the effectiveness of three experimental conditions on comprehension and retention of reading information. Students in the control group were taught what a main idea was through direct instruction while students in the monitoring group were taught to use self questioning to evaluate their progress at identifying the main idea. The keyword method was taught to a third group of LD student. They were taught to create an "interactive" visual image that linked the title with the main idea of the passage. The students in each group were given about 40 minutes of training. Using multiple choice items the students were asked to identify the main idea for the passages read. The findings of the study were that different strategies led to different learning outcomes. The monitoring strategy helped the students identify the main idea while the keyword (mnemonic) strategy resulting in higher levels of remembering of the content. This points to the need for careful selection and combining of the strategies taught to LD students to result in the expected gains.

Herr, C. M. (1988). Strategies for gaining information. Teaching Exceptional Children, Spring, 53-55.

Learning disabled students have trouble meeting class demands at the secondary level because of inefficient strategies and metacognitive skills. the author recommends the use of advance organizers to help students determine what is important information to memorize. They can be presented in either verbal or written formats. The teacher can state the important facts designating what must be remembered in the lecture. An outline on the board will also point out critical information to be learned. Teachers may also ask students to read to find out specific information or answers to questions. Summarizing or paraphrasing is another way to help students understand and retain information. Paraphrasing strategies require students to read a passage, identify the main idea and details and then put the information in their own words. Through a series of six questions, the self-questioning summarization strategy helps students find topic sentences and restate, through writing, key ideas and supporting details.

Hoover, J. J. (1989). Study skills and the education of students with learning disabilities. Journal of Learning Disabilities, 22(7), 452-461.

The article stresses the importance of study skill instruction throughout a student's curriculum, but especially in the junior high and secondary school years. Study skills include a variety of skills form listening and test taking to library usage and report writing. Many learning disabled adolescents do not learn these study skills on their own and often are not taught them. Hoover stresses the importance of study skill instruction. The article describes a number of study skill strategies for reading including SQ3R, PARS, PQ4R, OARWET, OKSR, Panorama, REAP, ReQuest and RARE. Each of these strategies is a multistep process to help students become better listeners. To assist in notetaking the Guided Lecture Procedure (GLQ) is recommended. TOWER is a writing strategy with COPS as the error monitoring component of this strategy. To facilitate effective test taking, the SCORER strategy is recommended. Word problems in math can be solved using the SQRQCQ strategy. The steps to each of these strategies are presented. In designing a study skills program, it is recommended that one look at the age, ability, and needs of the students, and then define specific goals, and model and guide practice of the study skills in a motivating way. These study skills should be taught from elementary through the secondary years.

Horton, S. V. & Lovitt, T. C. (1989). Construction and implementation of graphic organizers for academically handicapped and regular secondary students. Academic Therapy, 24(5), 625-640.

The authors describe a number of effective ways to use graphic organizers in mainstream classes. To do this they have created a four step process which involves dividing chapters into passages of about 1500 words, outlining the main ideas in these passages, choosing a graphic organizer that parallel the text structure and finally making the teacher and student graphic organizers to fit the material. The article covers graphic organizers for two types of text structure: hierarchical and compare-contrast. These graphic organizers can be used before, during or after reading of a text. To implement use of graphic organizers the authors recommend teacher directed development which focuses on interaction between students and the teacher. The authors have also used student directed graphic organizers with text references or with clues. Testing options presented include using a graphic format where the graphic organizer is the test and its completeness is evaluated. Research data also shows a multiple choice test to be an effective way to assess information learning through use of graphic organizers. Research about graphic organizers has documented their effectiveness for teaching content

information at the secondary level. Regular content teachers have also maintained use of graphic organizers after discontinuing research efforts.

Katims, D. S. (1989). Developing program pyramids for exceptional students. The Pointer, 33(4), 33-36.

The article describes an assessment model which results in the development of an individualized educational sequence for students with special learning needs. The program pyramid model focuses on providing information for the classroom teacher about the special student's learning needs. In the first step, the student's strengths and weaknesses are assessed using criterion referenced tests (CRT). The article lists four commercial examples of CRT's. Based on this information the general domains of needs are specified such as reading, spelling, or a specific content subject. The third step involved specifying the subdomains under the general ones specified such as reading comprehension. Based on this information long range goals are chosen. These become part of the IEP. Development of short term instructional objectives is the next step in the program pyramid. The selection of instructional methodologies is the last step. The author recommends use of an interactive ABC plan in which consideration of teacher controlled antecedents and teacher controlled consequences work together to change student behaviors. A model is provided in the article. This article provides a comprehensive system to proceed from assessment to instruction of handicapped students.

Lawrence, P. A. (1988). Basic strategies for mainstream integration. Academic Therapy, 23(4), 349-355.

The article contains a collection of practical strategies to foster successful integration of LD students into the regular education courses. It is important to maintain regular meeting times between regular and special educators to facilitate information sharing and collaboration. Teachers in regular classes should develop clear class rules and consequences. Consistency is important in implementing programs and administering rules in the regular classes. Directions should be provided in a clear, carefully worded manner. It may be necessary to individualize instruction for the LD student by such things as reducing the number of questions or problems to be completed, simplifying directions, or providing for more drill and practice. Direct instruction has been shown effective with LD students and should be used. Peer tutoring is another positive practice which often results in social acceptance of the LD student in the classroom as well as academic gains. It may be helpful to structure your transition times to avoid inappropriate behaviors. A

positive relationship with parents can provide information to the teachers to better enable them to serve the needs of the student. Written contracts can be effectively used with high school adolescents to modify classroom behaviors or design individualized student responsibilities. It is important to focus on positive student behaviors and avoid corporal punishment. The article contains some good general principles to guide regular teachers in the integration of handicapped students.

Lazarus, B. D. (1988). Using guided notes to aid learning-disabled adolescents in secondary mainstream settings. The Pointer, 33(1), 32-35.

The author highlights both the importance and complexity of notetaking for high school learning disabled (LD) students. The student is required to listen, comprehend, analyze main ideas, and hold them until they are written down while listening for other information. As LD students often have problems in these areas, notetaking is often difficult. Guided notes are a way of circumventing some of the intellectual load involved in notetaking. Guided notes are an outline of key points or topics to be covered with room for additions. It has been found that even nonhandicapped students record only 50% of the main ideas with LD students recording even fewer (Vogel, 1982). Guided notes may also include terms, definitions,and related issues. In selecting a guided note format the teacher should attend to the sequence of the lecture, the structure and content of the class, and a format that will lead to effective study of the material. Students should be trained and encouraged to use and study the guided notes. A sample guided note format is included in the article.

Mastropieri, M. A. & Scruggs, T. E. (1988). Increasing content area learning of learning disabled students: Research implementation. Learning Disabilities Research, 4(1), 17-25.

The authors conducted research to assess the effectiveness of traditional vs. mnemonic instruction of history information. The authors created the instructional materials for each of the models. Subjects included middle school students who were labeled LD. In the text of the mnemonic condition the authors included both acoustic reconstructions and symbolic reconstructions where students were either told to visualize a picture related to a specific word to allow for recall or shown pictures of related materials to retain the information. Parallel scripts were prepared for the traditional conditions. After and during eight weeks of instruction with these materials the groups were tested on recall of information. The students in the mnemonic condition had

greater recall of information on short term and comprehensive exams and indicated positive attitudes towards the materials attributing them for their success on the tests.

Mastropieri, M. A., Scruggs, T.E., & Levin, J. R. (1986). Direct vs. mnemonic instruction: Relative benefits for exceptional learners. The Journal of Special Education, 20(3), 299-307.

The researchers in this article attempted to compare the effectiveness of direct instruction and mnemonic instruction in the learning of hardness levels of minerals in science. The subjects of their research were 56 learning disabled high school students. The article describes in detail the instructional method used for both the direction instruction group and the mnemonic instruction group. The mnemonic instruction group focused on the use of the keyword pictorial mnemonic method. The results of this study were that the mnemonic instruction condition resulted in 80% recall of the information presented while the direct instruction condition resulted in 50% recall of the information. This was a statistically significant difference which shows the superiority of mnemonic instruction for recall of information by LD adolescents.

Middleton, J. L. (1985). "I just can't take tests!" The Science Teacher, February, 34-35.

The author points out the problem of many students using only skimming and scanning techniques to prepare for science tests. Science teachers can teach more than science by teaching study skills that will help their students succeed in all classes. Thirteen study tips are recommended. they include organizing materials, skimming, time plans, visualization, partner study, student generation of potential questions, recopying notes, noting main ideas and vocabulary, outlining chapters, reflecting on points emphasized by the teacher and using mnemonic memory strategies. When taking tests students can be taught to read the whole tests answering quick questions and ones that might be forgotten first and getting clues about some answers from other parts of the test. It is also important to remember to put your full names on the paper and budget your time. The article gives hints for true-false, multiple choice, essay and matching sections. Before tests are turned in, the authors recommend checking over the test. When these techniques are added to preparing for tests, the students will be more successful.

Scruggs, T. E., Mastropieri, M. A., McLoone, B. B., Levin, J. R. & Morrison, C. R. (1987). Mnemonic facilitation of learning disabled students' memory

for expository prose. Journal of Educational Psychology, 79(1), 27-34.

The researchers conduct two studies to study the effects of mnemonic and nonmnemonic illustrations on retention of information regarding North American minerals. The subjects included 24 secondary level LD students from a western metropolitan area. The instructional materials for the experimental group contained information to teach the students how to use keywords demonstrating with examples. Students were taught to use the keywords to retrieve the meanings of the terminology learned. Students who were taught using the mnemonic pictures scores an average of 93% on the tests in comparison to the 55% recognition of those students in the control group. Students in the experimental group also rated their method as more helpful and easier to use than the control group. In a second experiment regarding the same scientific information, the mnemonic group scored higher than the control group on immediate and long term recall of the information as well as attribute categorization of the content.

Schumaker, J. B., Deshler, D. D., Alley, G. R., Warner, M. M., & Denton, P. H. (1982). Multipass: A learning strategy for improving reading comprehension. Learning Disability Quarterly, 5, 295-304.

The article describes a research study in which LD high school students were taught a strategy to get more information from their content area textbooks. Using a multiple baseline study, it was demonstrated that the strategy could be taught to these LD students and that they could generalize it to their regular classroom materials. The multipass strategy itself involves a series of three passes over the textbook materials called the survey, size-up, and sort-out passes. When the students do the survey pass they preview the materials by looking at such things as titles, opening paragraphs, illustrations and summaries. In the size-up pass, the students first look at the end of the chapter questions marking the ones they already know. They also examine the text clues such as subheadings and make up questions about them and search for the answers to the question information and paraphrase this information. In the sort out pass students answer all questions at the end of the chapter. If they are unable to do so, certain steps are followed to locate the answers. This strategy is particularly helpful for secondary content reading in sciences and social studies.

Smith, P. L. & Tompkins, G. E. (1988). Structured notetaking: A strategy for content area readers. Journal of Reading, 32(1), 46-53.

The authors point out the many advantages of effective notetaking. Effective notetakers paraphrase and elaborate the information which facilitates memorizing. Texts are generally organized around one of seven expository structures: description, time/order, cause/effect, problem/solution, problem/solution/result, comparison/contrast or definition/example. Each of these cues the reader by presenting the information in different ways. The author provides graphic organizers to help the reader do notetaking on these various types of text structures. A teaching procedure to help students use these graphic organizers for notetaking is presented. the purpose of the graphic organizer is shared. Student learn to identify differences between content and structure and to match the graphic to the structure. Additional structures are added until the student can identify initially the explicitly presented and then implicitly presented structures. the teacher then models how to use the graphic organizer for notetaking. Students then follow the teacher's lead in pairs selecting an appropriate graphic and using it to take notes. This practice will lead to reflection on passages read, possible use in lectures and notetaking, and application in composition development.

Sywlester, R. (1985). Research on memory: Major discoveries, major educational challenges. Educational Leadership, April, 69-75.

This article contains a layman's analysis of current knowledge in the area of memory theory and research. Memory is currently believed to be localized in the brain. We have a limited capacity short term memory (seven plus or minus two items) in which we briefly hold information. To keep information in short term memory we must attend to it. Short term information that is retained is kept through the use of one of two systems. The declarative system processes information that is taken in at face value, simplistic and direct. It is processed in the hipposcampus of the brain which works like a "switchboard" making the necessary connections. The procedural system, on the other hand, processes information that includes "automatic motor or problem solving" which are more complex tasks. These skill memories are processed in the cerebellum which functions almost automatically as one develops these motor skills such as walking and talking. The author goes on to delineate four areas of challenge in the area of memory. These include deciding what should be memorized, how to change facts into useful concepts, use of memory for efficient problem solving and use of research findings to improve student use of memory. The article is a very readable account of the complex concept of memory functioning.

Torgesen, J. K. Dahlem, W. E., Greenstein, J. (1987). Using verbatim text recordings to enhance reading comprehension in learning disabled adolescents. Learning Disabilities Focus, 3, 30-38.

In a series of three studies, Torgesen et al, examine the use of audio-tape recorded text. This is a common "mainstreaming" suggestion for LD adolescents who typically read at a third-to-fifth-grade level, but which lacked an empirical data base. In the first study, 16 randomly selected high school LD students were subjected to about 5 minutes of taped material from their history, civics, or health classes. A short-answer-format quiz was given to the students in order to assess comprehension. Each subject received 3 conditions (read only, listen only, and read listen) in counterbalanced order. There was clear evidence that the supplemental recorded material improved performance and that improvement was consistent across time. there was no evidence of a differential effect of for either read-listen and listen (both averaged approximately 60% correct); both were superior to read only (35%). At least for short passages and immediate recall, tapes texts improve the reading performance of LD high school students.

In a second experiment, read-only and read-listen conditions were compared under conditions where students read longer (30 min.) passages and took tests over cumulative material was delayed. Contrary to results of the first study, there was no group-wide improvement associated with the read-listen condition. A trend for the effectiveness of the read-listen condition to be correlated with IQ was observed.

A third study was conducted to see if a study-technique (stop and answer questions periodically) would enhance the effectiveness of the read-listen procedure. The directed-study method only improved performance under read-listen conditions.

Secondary educators should be encouraged to use verbatim taped methods to increase the access of LD students to academic content. However, it should be noted that merely taping texts will not improve performance longitudinally. This procedure must be combined with (1) environmental manipulations which encourage distributed practice and (2) teaching study skills and strategies.

Waldren, K. A. (1987). The learning disabled adolescent: A curriculum for written expression. The Pointer, 31(2), 16-20.

The author describes the common learning weaknesses of many learning disabled students of having poor receptive and expressive verbal language skills which impede the development of future language skills of

reading and writing. A modified linguistic model is proposed with a curriculum to focus on improving the student's total language ability with systematic usage instruction under an "umbrella" system to allow the student to relate all writing aspects with one another. The steps to this linguistic curriculum approach involve the modeling of first written sentences and verbal statement progressing to paragraphs and finally essays. The article goes on to present a number of principles for teaching grammar and syntax, paragraph writing, and essay writing.

Wood, J. W. (1987). Adapting the presentation of academic content. Academic Therapy, 22(4), 385-392.

Wood presents a number of ways to adapt the presentation of oral language development activities, reading, and writing. To improve oral language reception and delivery, Wood recommends the use of audio tapes to tape questions and receive information from the student. The use of visual prompts is recommended to improve the student's ability to give oral reports, do storytelling, or participate in plays. Highlighting the text information to respond to "wh" questions in text and the use of graphic organizers to depict abstract ideas is also recommended. Examples of these are presented in the article. In the area of writing, the author recommends cues in the library to help students find references and provides an outline worksheet to help the students keep track of reference information. Graphic organizers are presented as a means to organize research material with major and minor headings. Steps in developing this type of organizer are presented in text. A visual model for writing a business letter is also presented. Practice activities for the teaching of punctuation and capitalization are also provided.

Wood, J. W. & Miederhoff, J. W. (1988). A model for adapting the teacher-made test. The Pointer, 33(1), 7-11.

This article describes an easy and practical way to adapt teacher made tests for handicapped students. This can be accomplished by changing the way the test is made or administered. Test construction can be changed by altering directions; some examples of this include simplifying the length or changing the word usage or providing a visual model of how to follow the directions. the article shows how to adapt various forms of test items such as true/false, matching, multiple choice and completion. With multiple choice items students perform better when they circle answers and questions are put vertically on the page. When matching test items are used it helps to keep matching lists to ten or fewer items,

alphabetize items or put them in numerical order, and put all matching items on one page. In true and false allow students to circle the items and avoid using negative statements because of the tricky language skills required. Completion items are harder for these students so that using answer banks under items may facilitate student recognition where total recall is unlikely. If using essay items, be sure students know the meaning of clue words used, are able to read and comprehend the question and are allowed to write or use an outline where total recall is difficult.

Tests may also be modified by changing the test location and procedures. Tests can be given orally in other settings with directions read orally and explained. Some students benefit from being taught test taking strategies while others need adaptations on the actual tests. The authors point out that these changes may result in success experiences in secondary content area classes.

Lenz, B.K. (1987). Using advance organizers. The Pointer, 27, 11-13.

LD students often have trouble deriving structure from information received from lectures or text; that is, they are passive learners. Methods which provide this structure increase academic performance of mildly handicapped students. Advance organizers fit the cognitive learning model which has been used to explain passive learning in LD students. Lenz presented a review of what is known about generating and using advance organizers.

Included as examples of advance organizers were such materials and activities as announcing benefits of the organizer itself, listing topics and subtopics, presenting background information and vocabulary prior to a reading assignment or lecture, or making goals and objectives public. Lenz presented a lengthy list of steps for developing organizers:

1. Inform students of advance organizers
2. Identify topics of tasks
3. Provide an organizational framework
4. clarify action to be taken
5. Provide background information
6. State the concepts to be learned
7. Clarify concepts to be learned
8. Motivate students to learn
9. Introduce vocabulary
10. State the general outcome desired

(p. 12).

Advance organizers can be used to develop a learning set and will thus benefit all students in a class; there is some indication that LD students will have to be trained to use advance organizers in order to derive maximum benefit from them.

Johnson, S.E., & Hoover, J. H. (1989). Use dialogue journals with secondary learning disabled students. Academic Therapy, 25, 75-80.

Learning disabled secondary students evidence several problems with written expression. Among these are smaller idea units and trouble generating appropriate amounts of written output. Many scholars have blamed these problems on the disability interacting with motivation. An educational challenge, then, is to find a way of generating written expression among secondary LD students.

Dialogue journals consist of written language in the form of a conversation. They have been used successfully to generate language among inner city children, mentally retarded adults, and individuals learning English as a second language. Johnson and Hoover suggested using this method with secondary LD students.

Johnson and Hoover emphasized that journal exchanges should be nonjudgemental--grammar and syntax should not be formally evaluated as the method is designed to counteract motivational

problems. Any "teaching" is accomplished via modeling appropriate forms in the conversation. Several specific suggestions were added: It may help to have a formal time and place to exchange journals. The dialogue journals should be appealing to the eye. Confidentiality should be maintained at all times. In a concluding remark, Johnson and Hoover (1989) pointed out that journals are to "emphasize process over product", and that they were beneficial because LD students write to a specific audience for meaningful reasons.

Scruggs, T.E., & Richter, L. (1986). Tutoring learning disabled students: A critical review. Learning Disability Quarterly, 9, 2-14.

Increasingly, mildly handicapped students are being served in regular classrooms and are expected to benefit both socially and instructionally. Methods have been developed to facilitate this which emphasize interaction between handicapped and nonhandicapped students. The two methods which best exemplify this principle are cooperative education and peer tutoring. Scruggs and Richter provided a thorough review of research findings regarding peer and other types of LD tutoring,

Scruggs and Richter reported that 24 defensible studies had been completed up to 1986. A variety of tutors were employed including LD students themselves. Reading was the most common subject matter appearing in 14 of the 24 reviewed studies. Dependent measures collected were tutee academic gains, tutor academic gains, social benefits to tutors, and social benefits to tutees. It was concluded that LD students do learn in tutoring situations. Scruggs and Richter complained, however, that inadequate research designs have left many questions unanswered, including the following:

> "(a) whether tutoring is better for LD students in the capacity of tutor v. tutee; or (b) whether tutoring can be more profitably employed in specific skills tasks (e.g., multiplication facts) or as a general supplement to curricular programs (e.g., basal reading)" (p. 13).

In addition, the authors of the review argued that the ultimate question has not been asked: Is tutoring more effective than other instructional techniques? Despite the many shortcomings of empirical research on the topic, Scruggs and Richter maintained that they had encountered no educational method which..."meets with such unqualified enthusiasm" (p. 13).

Moore, D.W., & Readence, J.E. (1984). A quantitative and qualitative review of graphic organizer research. Journal of Educational Research, 78, 11-17.

Moore and Readence conducted a comprehensive review of research on use of graphic organizers. For those papers where it was possible, effect sizes were calculated and combined via meta analytic procedures. Other studies were analyzed qualitatively. In an earlier review, the same authors reportedly found a small overall effect size for advance organizers. Stronger effects eventuated when "...students constructed GO's after encountering content and when vocabulary knowledge was the dependent variable" (p. 11).

In the quantative portion of the 1984 study, Moore and Readence again found small effect sizes for GO's across all studies (.22). As in the earlier study, graphic post organizers produced stronger effects than when graphics were used as a preorganizer. Another finding of interest was that GO's had larger effects on vocabulary acquisition than on general comprehension. Finally, it was observed that use of GO's was valued by teachers as an efficient way to organize information about lessons and units

Amerine, F. J. (1986). First things first. Clearinghouse, 59, 396-397.

According to the author, content-area teachers frequently complain about middle school students' ability to derive information from tetbooks. She argued that, in her experience, many teachers did not sufficently account for students prior level of knowledge and developing a scaffolding or structure for ideas. A demonstration project was described where a group received advance organizers, graphic organizers, and vocabulary experiences was compared to a non-treated group (in middle school science classes). The control group received only reading assignments and quizzes while the experimental group received the three activities cited above prior to reading the text.

Experimental subjects outperformed control subjects at post test. These results, however, can be interpreted variously. It is possible that the raw amount of teaching rather than knowledge--organization produced observed effects. Still, a methodology has some validity if it focuses interactions between teachers and students. The author argued also that the graphic organizers helped move the class from lower levels of factual information to knowledge about the relationships between ideas--an important higher level of analysis.

Hawk, P. (1986). Using graphic organizers to increase achievement in middle school life sciences. Science Education, 70, 81-87.

The effects of graphic organizers on the science achievement of 455 sixth and seventh graders were investigated. Students in the experimental group were provided graphic organizers

coinciding with the text used by all subjects. Contrast subjects used all of the same materials except the graphic organizers. The experiment ran from September to January. Post test scores, adjusted via ANCOVA for pretest results, favored the experimental group. Mean adjusted gain score for the experimental group and control group respectively were 21.38 and 12.07. The authors interpreted this result to mean that graphic organizers were an effective treatment for students this age. However, it is not clear what methods the control group teachers used so exact comparisons are not possible.

Bean, T.W., Sorter, J., & Singer, H., & Frazee, C. (1986). Teaching students how to make predictions about events in history with a graphic organizer plus options guide. Journal of Reading, 29, 739-745.

Bean et al. argued that much textbook material is episodic and compartmentalized. Students are not drawn from chapter to chapter by unifying themes. They suggested an alternative method where the instructor presents unifying themes via advance organizers and ancillary reading material.

The authors describe a project where they attempted to infuse structure not present in a tenth-grade history text. In the text there were separate chapters on the English, French, and Russian revolutions. However, the concept of revolution was not developed. The authors presented students with an article about revolutions and students were guided through preparation of an advance organizer (AO) of information in the "revolutions" article. Students then read chapters on revolutions and tried to fit information into the "revolutions" schema (AO). In addition, students were periodically presented with "options guides". These contained three possible solutions to historical dilemmas. Students were to select and defend one option as the most probable prior to reading the selection. The idea was to encourage students to become more active and interactive while reading text material. This is particularly important for special education students who are often characterized as passive learners. Bean et al. concluded that the active learning materials enhanced the acquisition of conceptual information but no specific data were provided to back up this claim.

Darch, C. D., & Carnine, D. (1986). Teaching content area material to learning disabled students. Exceptional Children, 53, 240-246.

The effects of visual/spatial advance (graphic) organizers and text-only instruction were compared in this study. Subjects were elementary and middle school-aged LD students. Experimental subjects received materials which hierarchically and graphically depicted information from social studies and science. To ensure consistent application, materials were shown via overheads and, to the extent possible, all teacher verbalizations were scripted. The contrast group received more traditional instruction featuring text reading and teacher-led discussions.

The visual display group (VG) outperformed the text group 86% to 56% on a post test. The visual display produced strong instructional effects. No differential effect for VG was noted on a transfer test--an expected result given the generalization problems which characterize many members of the LD population.

Johnson, D.W., Johnson, R.T., Warring, D., & Maruyama, G. (1986). Different cooperative learning procedures and cross-handicap relationships. Exceptional Children, 53, 247-252.

One goal consistently cited for mainstreaming is increased social integration of handicapped youth. A promising method for accomplishing this goal is the use of cooperative education. In the cooperative learning paradigm developed by the first two authors of this paper, the school environment is arranged in such a way that to accomplish assigned tasks students must cooperate in small groups. In addition, necessary cooperative social skills are taught, modeled, and reinforced. Convincing evidence exists that this method produces improved peer interaction between handicapped and nonhandicapped students.

Some doubt has been expressed, however, about the degree to which these improved relationships transfer to noninstructional environments. In addition, it has not been clearly established whether totally cooperative environments produce better results than classrooms operated partly cooperatively and partly competitive or individualized.

Evidence was produced that relationships established via cooperative education generalizes to nonstructured environments. In addition, "pure" cooperative classrooms produced more positive interactions than did "mixed" environments.

Darch, C., & Gersten, R. (1986). Direction-setting activities in reading comprehension: A comparison of two approaches. Learning Disabilities Quarterly, 9, 235-243.

Experimental subjects (12 LD high school students) received preteaching exercises culminating in production of advance organizer in outline form. The other ("basal") subjects received..."loosely structured motivational activities involving a good deal of teacher-student discussion of the topic to be addressed" (p.239). This condition was designed to represent typical instructional methods. The advance organizer condition produced retention superior to methods..."geared towards indirectly activating pre-existing schema". This may represent a difference between LD and non-LD secondary students. In studies of nonhandicapped students, student-generated organizers produced superior results. The overall difference may be in the absolute amount of background information possessed by students.

TYPES OF ACTIVE LISTENING

Acknowledging

Paraphrasing

Reflecting

Clarifying

Elaborating

Summarizing

TYPES OF DATA THAT CAN BE COLLECTED IN THE REGULAR CLASSROOM

1. **FREQUENCY DATA**- How Often the Behavior Occurs (10 times)

2. **DURATION DATA**- How Long the Behavior Lasts (25 minutes)

3. **LATENCY DATA**- How Much Time Lapses After the Student Should Start a Behavior and Actually Does (10 minutes)

4. **RATE DATA**- How Often the Behavior Occurs in a Specific Amount of Time (Frequency/Time; 3 times per minute)

5. **PERMANENT PRODUCTS**-Hard Copy Data That Can Be Studied at a Later Date (Student Paperwork, Audio or Videotapes of Class Activities)

6. **ANECDOTAL DATA**-Narrative Report of Behavioral Events

ASSESSMENT AREAS IN THE FORMAL ASSESSMENT PROCESS IN SPECIAL EDUCATION FOR LABELING A STUDENT LD

PSYCHOLOGICAL- (IQ)

SOCIAL-EMOTIONAL

PHYSICAL

HEARING

VISION

SPEECH AND LANGUAGE

ACADEMIC ACHIEVEMENT

BIGGE'S (1988) LEVELS OF ASSESSMENT MODIFICATIONS

1. SAME OBJECTIVE--SAME COMPLEXITY
2. SAME OBJECTIVE--REDUCED COMPLEXITY
3. LOWER GRADE COMPETENCY
4. DIFFERENT OBJECTIVE
5. UNIQUE DIFFERENTIAL STANDARDS

Advance Organizers

Definition: Materials presented prior to a learning session designed to set the stage for learning and/or provide a structure or scaffold for to-be-presented information.

Forms:
*formats for note taking
*development of new vocabulary
*motivational statements
*a list of "items to listen for"

Why Do Advance and Graphic Organizers Work With LD Students?

*They may provide a visual analog for the structure of relationships the teacher is presenting

*The visual nature of graphic organizers may reduce the level of abstraction in a lesson

*Visual features may aid use of a memory aid (visualization)

*Preparation may help LD students react to a learning situation more actively

TYPES OF MEMORY STRATEGIES

VISUAL IMAGERY

THREE TYPES:

1. Method of Loci

   *Used to memorize items based on their locality in a specific place

   *You search mentally through the various locations to retrieve the images of the objects, people, parts, etc. in these locations.

2. Pegword Method

   * Used to memorize items when other visual images are difficult to create

   * The student memorizes a list of ten items linked in some fashion that are very concrete so that a mental image may be created readily for each one.

   * The student pairs these concrete images and makes new images, associates the pegword with the new word to retain the new information to be memorized.

   * To recall the information, the student merely recalls the original list of ten objects and the associated images of the new items are retrieved.

3. Keyword Method

   *Used to memorize abstract words that can be related to a word that is concrete in nature to create an image.

   *The student associates the abstract word with a concrete word that sounds very similar to the word.

   *An mental image is made of the concrete word with meaning of the abstract word.

   *To recall the word, the student recalls the image from the sound of the unknown word to remember its meaning.

VERBAL MEMORY STRATEGIES

ROTE REHEARSAL

*Used to memorize words and their meanings, lists of objects, etc.

*Effective when you must memorize a small amount of information for a short period of time, such as a phone number.

*Involves repeating the digits or items overtly and covertly until they can be used.

*May assist temporarily until information is filed in long term memory.

*Retrieval over the long term is often difficult when similar information has been memorized in this fashion.

CREATION OF NARRATIVE STORIES- "CHAINING"

*Used to memorize lists of words

*The student creates a narrative story around the critical words to be remembered.

*The words are woven into the story in the order in which they are to be recalled.

*These words are emphasized in the story by making them major actors or objects in the narrative.

FIRST LETTER MNEMONIC STRATEGIES

*Used to memorize lists of items or steps in a process

*The student identifies an important word in each statement or step.

*The words are placed in the correct sequence.

*The first letter from each word is isolated.

*The first letters are shuffled to see if a word can be made from them or a word that sounds similar to the spelling made by these letters.

*If a word can not be made a sentence is created using the first letter or each of the key words.

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Pinna

Applied Behavior Analysis

*Based on rules/principles of operant conditioning

*A process of increasing or decreasing specific, observable behaviors

*Reinforcement of appropriate or desired responses is a central feature

Increasing Desired Behavior

Positive Reinforcement: Following a response with a reinforcer strengthens the response

Modeling and Other Prompts: Prompts are stimuli added to a learning situation which ensure that a behavior will be emitted (so it can be reinforced). Modeling is showing or demonstrating performance.

Fading: Fading means the systematic removal of a prompt.

Increasing Desired Behavior
(Continued)

Shaping: Achieving correct performance by positively reinforcing closer and closer approximations.

Chaining and Task Analysis: Task analysis is the careful identification of a set of discrete subskills making up a complex skill. The process of teaching these steps is called chaining or chain training.

Decreasing Undesirable Behavior

Positive Reinforcement-Based Methods: Undesired behavior can be reduced via reinforcement of periods of time when it does not occur (DRO) or reinforcing an appropriate incompatible behavior (DRI).

Differential Reinforcement of Other Behavior: (DRO) A student is reinforced following specified periods of time during which the target undesirable behavior does not occur. Typically, the length of the periods of nonoccurrence are systematically increased (shaping).

Differential Reinforcement of Incompatible Behavior: (DRI) Students are rewarded for emitting preselected, appropriate responses which cannot occur at the same time as the target inappropriate behavior.

Decreasing Undesirable Behavior
(Continued)

Extinction: A formerly reinforced behavior is no longer reinforced. When attention is withheld, this is a special case of extinction called planned ignoring.

Time Out: A student is removed from a reinforcing environment for brief periods of time contingent on inappropriate behavior.

Punishment: Punishment is defined as contingent application of aversive (punishing) stimuli in order to reduce a behavior. Currently, behavior analysts try to avoid use of punishment.

Group Management Suggestions
(From Biehler & Snowman, 1986)

1. Show you are confident and prepared on the first day of class
2. Think ahead about and explain basic class procedures
3. Establish and call attention to class rules
4. Begin first day with an instructional activity which can be completed quickly and successfully
5. For the first few weeks, have new students engaged in directed, whole-class activities
6. Give clear instructions, feedback, and hold students accountable for carrying them out
7. Continually demonstrate that you are competent, prepared, and in charge
8. Establish a businesslike but supportive and pleasant classroom atmosphere

A Principle Guiding Selection of Methods an Materials for Mainstreamed LD Students:

Move from the abstract to the concrete. In other words...

Can a theory's action be demonstrated?
Can material be graphed or otherwise depicted?
Can tangible materials be used?
Can I incorporate other sensory modalities?